Project Design Phase-I
Proposed Solution Template

Date	06 May 2023
Team ID	NM2023TMID12066
Project Name	AI enabled car parking using open CV
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
•	Problem Statement (Problem to be solved)	The increasing number of vehicles in urban areas has led to a significant challenge of finding parking spaces. This issue has resulted in traffic congestion, air pollution, and frustration among drivers. Traditional parking systems are inefficient and time-consuming, leading to a waste of resources. Therefore, there is a need for an advanced parking system that can efficiently manage parking spaces.
•	Idea / Solution description	An AI-enabled car parking system using OpenCV is a solution to the problem of finding parking spaces. The system uses cameras and sensors to detect the availability of parking spaces and guide drivers to them. The system uses OpenCV, an open-source computer vision library, to process images captured by cameras installed in the parking lot. The system first identifies empty parking spaces by analyzing the images captured by the cameras. It then uses machine learning algorithms to predict the availability of parking spaces based on historical data. The system guides drivers to available parking spaces using LED lights or an app that displays real-time information about available parking spots.
•	Novelty / Uniqueness	The use of AI and OpenCV technology in car parking systems is a novel approach that offers several advantages over traditional systems. The system is highly accurate in detecting available parking spaces, reducing the time taken to find a spot. The use of machine learning algorithms enables the system to

		predict the availability of parking spots accurately. The LED lights or app-based guidance system provides an easy-to-use interface for drivers.
•	Social Impact / Customer Satisfaction	The AI-enabled car parking system using OpenCV has several social impacts, including reducing traffic congestion and air pollution caused by vehicles searching for parking spots. The system also reduces frustration among drivers and improves their overall experience when visiting a location with limited parking space. Customers will appreciate the convenience offered by this system and be more likely to return to locations that have implemented it.
•	Business Model (Revenue Model)	The revenue model for this business could be based on a subscription-based service. The parking lot owner would pay a monthly fee for the use of the system, and customers would pay for parking as usual. The system's cost could be offset by the increased efficiency in managing parking spaces, resulting in higher revenue for the parking lot owner.
•	Scalability of the Solution	The AI-enabled car parking system using OpenCV is highly scalable and can be implemented in any location with a parking lot. The system can be customized to suit different parking lot sizes and configurations, making it adaptable to various locations. Additionally, the system's machine learning algorithms can be continuously improved to enhance accuracy and predictability.